b) The 10β-formyl group is reduced to the C-19-hydroxy compound,

c) The thus produced 17β-silylated-3,3-(2,2-dimethyl-trimethylenedioxy)-androst-9(11)-ene-5α,19-diol is reacted with elementary halogen or radiohalogen, selected from Br or I, to form 17β-silylated-3,3-(2,2-dimethyl-trimethylenedioxy)-19-halogen-androst-9(11)-en-5α-ol,

d) Water is cleaved off, and

e) The thus produced isomer mixture that consists of 17β-silylated-3,3-(2,2-dimethyl-trimethylenedioxy)-19-halogen-androsta-5,9(11)-diene and 17β-silylated-3,3-(2,2-dimethyl-trimethylenedioxy)-19-halogen-androsta-4,9(11)-diene is mixed with a strong protonic acid for the formation of target compounds I.

6. (Amended) Process according to claim 4, wherein the halogen or radiohalgen is added in a small excess.

7. (Amended) Process according to claim 4, wherein the dehydration is carried out under standard conditions, preferably with thionyl chloride/pyridine.

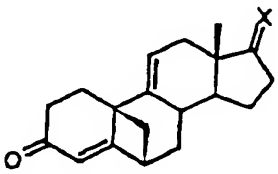
8. (Amended) Process according to claim 4, wherein trifluoroacetic acid, sulfuric acid or methanesulfonic acid is used as a strong protonic acid.

9. (Amended) Use of the compounds of general formula I according to claim 1 as a diagnostic agent.

11. (Amended) Use of the non-labeled compounds of general formula I according to claim 1 as starting products for the production of 5β-substituted androst-9(11)-enes of general formula II with radical R in the meaning of: R = $-(CH_2)_n-CH_2-R^1$, $-(CH_2)_n-CH_2-OR^1$, $-(CH_2)_n-CH_2-OCOR^1$, $-(CH_2)_n-CH_2-SR^1$, $-(CH_2)_n-CH_2-NR^1R^2$, $-(CH_2)_n-CHO$, $-(CH_2)_n-CN$, in which n can

assume the values of 0-5, and radicals R^1 and R^2, independently of one another, stand for hydrogen or a straight-chain or branched, saturated or unsaturated hydrocarbon radical with up to 18 C atoms, whereby this radical optionally can contain additional functional groups and carbocyclic or heterocyclic ring elements.

15. (Amended) Use of the non-labeled compounds of general formula I according to claim 1 as starting products for the production of 6β,19-cycloandrostadienes of general formula III, in which X = O or the grouping 17β-OR, 17α-H, with R in the meaning of H, C1-C10-alkyl, C1-C10-acyl, whereby the acyl radical is derived from an aliphatic or aromatic carboxylic acid.



III

19. (Amended) Process according to claim 17, wherein the base treatment is carried out in an aprotic solvent.

A5